

OhioEPA
Division of Surface Water

Response to Comments

Project: FirstEnergy Lake Shore Plant, National Pollutant Discharge Elimination System (NPDES) Permit

Ohio EPA ID #: 3IB00004

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Ohio EPA held a public hearing on October 2, 2008, regarding FirstEnergy Lake Shore Plant's National Pollutant Elimination System (NPDES) Permit. This document summarizes the comments and questions received at the public hearing and/or during the associated comment period, which ended on November 7, 2008.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format.

Comments on Public Information / Outreach / Environmental Justice

Comment 1: Public notice for the October 2 meeting was not posted on the Ohio EPA web site under the EPA Weekly Review; it was noted only on the Public Meeting Calendar section and Press Release Archive. While the legal notice requirements were met, the notice was not sent to interested parties until September 23, 2008. Moreover, in canvassing the local community, Sierra Club members and volunteers found that most residents were completely unaware of this FirstEnergy proposal.

Earth Day Coalition suggests that Ohio EPA adopt the core practices from U.S. EPA's "Core Values and Guiding Principles for Public Participation", Volume 2, Number 1, Spring 1996, and "The Guiding Principles for Public Participation" developed by NEJAC to ensure early and meaningful involvement of the public.

Response 1: Ohio EPA has included these in our public participation procedures. Also see Response 3 below.

Comment 2: This permit modification must assign an environmental justice designation to this area; the area within three miles of the Lake Shore Plant is a textbook case of an environmental justice community. According to U.S. EPA's environmental justice geographic assessment tool, the neighborhood is 90% minority, with 35% of people living below the poverty level. Levels of heart disease and cancer in the area are significantly above U.S. averages. Cuyahoga Co. is in the 95th percentile for cancer and neurological risks. The sensitive nature of the surrounding community in EJ terms makes it even more essential to strictly control mercury effluent, even at high cost.

These low-income residents have little or no choice to move elsewhere. Their health and safety are directly affected by FirstEnergy's emissions and discharges. Subsistence anglers fish in the area near the Lake Shore Plant, relying on Lake Erie to help put food on their tables. Was Ohio EPA aware that there are a number of subsistence fishers near this facility?

Response 2: Ohio EPA considers this area to have environmental justice concerns. We understand that there are likely to be subsistence fishers in this area. The Lake Shore Plant will be required to reduce the mercury discharge to the maximum extent possible using pollution prevention techniques and the existing treatment plant.

Comment 3: Does this Environmental Justice designation trigger any additional requirements of Ohio EPA for public notice and public participation?

Response 3: As a recipient of federal funding, Ohio EPA is under a legal obligation to comply with Title VI of the Civil Rights Act. We have fully reviewed the guidance developed by U.S. EPA for states regarding environmental justice. We meet our legal obligations and implement federal guidance through both our technical review and our public involvement activities on permit applications.

Additionally, any recipient of federal funding, such as Ohio EPA, must comply with Title VI of the Civil Rights code. Under U.S. EPA's Title VI implementing regulations, States are prohibited from using criteria or methods of administering its program that have the effect of subjecting individuals to discrimination because of their race, color or national origin. As a result, States may not issue permits that are intentionally discriminatory or issue permits that have a discriminatory effect based on race, color or national origin. While we do not have a specific environmental justice policy to follow, we consider all comments raised regarding environmental justice to ensure we comply with Title VI.

Ohio EPA designs its public participation efforts recognizing the need to provide timely and meaningful participation and outreach as recommended in EPA's draft guidance designed for U.S. EPA assistance recipients administering permitting programs [see generally, 65 FR 39650 (June 27,2000)]. Ohio EPA:

- Provided participants in the process with the information they need to participate in a meaningful way;
- Ensured that public concerns are appropriately considered;
- Communicated to participants in the process how their input can be used;
- Used an open and transparent process;
- Provided understandable information necessary for effective community participation, and;
- Provided clear explanations and reasons for the decisions made with respect to the issues raised by the community.

Comments on the Mercury Variance Application

Comment 4: A mass-balance study looking at all sources, including all water and air emissions, should be required to provide an estimate of the total mass of mercury that is currently discharged to surface water so the public has a perspective of the contributions from Outfall 002 as well as others associated with the facility. The fact sheet references mercury at Outfall 003 – is that part of this variance request?

Response 4: This information can be determined from the Toxic Release Inventory (TRI). According to the 2007 TRI, the Lake Shore Plant emitted 43 pounds of mercury in the air (stack emissions) and 28.2 pounds in off-site disposal (mostly fly ash – Lake Shore has a dry fly ash handling system). The TRI does not show reportable surface water loadings, but DSW data (self-reporting data) shows that 0.0119 pounds of mercury discharged from Outfall 002 during 2007. Also, the same data for Outfall 003 shows an estimated 0.0174 pounds of mercury discharged in 2007.

This variance request does not cover Outfall 003, which consists of water treatment and other “low volume” process wastewaters (as defined in the federal effluent guidelines [40 CFR 423]). FirstEnergy would need to make a separate variance request for this outfall, if needed.

Comment 5: **The fact sheet says that the generating capacity of the plant is 540 megawatts of electricity; the variance application says that the generating capacity of the plant is 249 MW. Which is correct, and how does that affect the mercury data?**

Response 5: FirstEnergy has been shutting down units at the Lake Shore Plant over the last few years. When the last NPDES permit was drafted (August 2008), the company commented that the plant reduced capacity from 540 MW to 450 MW. Since that time, it appears the capacity has been reduced further to 249 MW.

It is difficult to tell if downsizing capacity had an effect on mercury concentrations. Ohio EPA looked at this information, using the flow from Outfall 001 (once-through cooling water) as a surrogate for power output; almost all of the mercury data for Outfall 002 (2001 to present) was taken at times when it appeared the plant was operating near capacity. It is not possible to tell if operating output has any effect on mercury discharges from Outfall 002. Data on this analysis is attached.

Comment 6: **Please do not allow FirstEnergy to dump unsafe levels of mercury into Lake Erie. The original mercury limit was set to protect human health and the environment. The EPA has been issuing fish advisories to protect the population and now FirstEnergy wants permission to dump more mercury than the legal limit.**

The operators of this plant have a history of contempt and disregard for our health and environment. The plant has been non-compliant with environmental standards for twelve consecutive quarters and has been issued a formal notice of violation at least twice in the last five years. Please reject the requested mercury

variance and proposed permit modification. Ohio EPA must take all steps necessary to enforce the current permit limits for mercury.

Response 6: FirstEnergy is not requesting to increase mercury discharge. The company requested the variance to allow for time to reduce mercury discharges, as it is may not be feasible to meet the water quality standard prior to the expiration of this permit.

The quarters of non-compliance refer to an on-going U.S. EPA investigation into modifications of the facility, and whether these modifications triggered a new source review; these do not refer to exceedances of the air pollution control permit limits.

U.S. EPA had requested information from FirstEnergy on the modifications; when the company did not respond within the allotted time, U.S. EPA took enforcement action, issuing an administrative order (May 2008) followed by a consent order (July 2008) to collect this information. FirstEnergy sent parts of the information requested to U.S. EPA on December 12, 2008, January 2, 2009 and May 1, 2009. U.S. EPA indicated that some information remains to be submitted under these orders.

Comment 7: **FirstEnergy should be required to meet the discharge limits in their current NPDES permit and should be held accountable if they do not. Mercury is a neurotoxin that has been proven to cause developmental delay and mental retardation in fetuses and young children. Presently, one in six American women has such high mercury levels in her body that she cannot safely bear children; the situation is even worse in populations that rely heavily on fish for sustenance. The cost of compliance must be balanced with the extraordinary public health threats of lowered intelligence, permanent learning and cognition problems from mercury contamination. There is also no data referenced to assess discharges regarding Environmental Hazard Assessment. That seems critical and should be required.**

Response 7: The Lake Shore Plant will be required to reduce the mercury discharge to the maximum extent possible using pollution prevention techniques (Pollutant Minimization Program) and the existing treatment plant. Ideally, these methods will achieve the 1.3 ng/l limit, but it is not known if this limit will be met; It may take longer than a permit cycle to meet the mercury standard. Current treatment technology cannot guarantee that discharges will consistently meet discharge standards in this low range for any type of plant.

To begin a hazard assessment, we have put together all available fish tissue data for mercury in this area of Lake Erie (the eastern part of Cleveland Harbor and other areas close to the plant). While the data is not large enough to say that fishing is safe for all species at all times, none of the fish tested exceeded the federal fish tissue criterion of 0.3 milligrams per kilogram (parts per million).

Comment 8: Why is FirstEnergy applying for a variance two years in advance of the compliance date?

Response 8: FirstEnergy must apply for a copper dissolved metal translator and a mercury variance under the Antidegradation Rule. It appears the facility combined the applications submitted to the Ohio EPA. The compliance schedule for copper is shorter than the schedule for mercury, which is why the mercury application was submitted in advance of the compliance date.

Comment 9: FirstEnergy's request should be denied because the Clean Water Act variance provisions do not authorize the Ohio EPA to remove mercury discharge limits.

Response 9: We acknowledge that state and federal variance rules do not allow us to remove an effluent limit. A variance must be an alternate limit.

Comment 10: A proposed variance limit of 8-13 nanograms per liter (ng/l) was presented at the public meeting. That seems dangerously close to source data observed before the new permit limits go into effect, and are at the upper limits of the data distribution. If all permit holders request and receive variances, little or no mercury reductions will occur by 2010. If the company can document 2.9 ng/l, that should be the variance limit until a more stringent goal can be achieved.

Response 10: The difference between these values is the difference between the long-term average of the discharge (2.9 ng/l) and the average effluent limit.

U.S.EPA recommends against using long-term average values as effluent limits (Technical Support Document for Water Quality-based Toxics Control, March 1991). The process outlined in this guidance instructs permit writers to calculate a long-term average concentration for the discharge, and then statistically determine a monthly average effluent limit based on a standard effluent variability and the number of samples per month. This provides an upper bound of monthly averages that represents a value that the discharger will be able to comply with, while maintaining the long-term average. The Projected Effluent Quality

average statistic from the Great Lakes Initiative procedures closely matches this process.

An upper bound estimate is used because all effluents have some variability. For any treatment system, a limit set at the long-term average will result in the discharger being in violation approximately 50% of the time. Setting a limit that a discharger can consistently meet requires us to look at the variability of well-operated treatment systems.

Ohio EPA recommends a variance-based monthly average limit of 7.1 ng/l, based on the PEQ average statistic for Outfall 002. This represents the 95th percentile of the data reported. See the attached data for details.

A Pollutant Minimization Program (PMP) is submitted for review, along with a mercury variance request. The PMP is the plan that drive mercury reductions because the specific actions that lead to specific effluent reductions are unknown. We expect reductions in mercury discharges as a result of the PMP; we don't know how fast or extensive those will be.

Comment 11: What tissue sampling has the Agency collected at or near the facility's outfall points? What plans are there for additional data collection? Is sedimentation from mercury a potential concern? Has, or will the Agency, sample, review existing data, implement new or additional sediment sampling near the facility?

Response 11: Attached is fish tissue data collected from the eastern part of Cleveland Harbor and areas within 2-3 miles of the Lake Shore Plant. The data was collected by Ohio EPA, ODNR and the Northeast Ohio Regional Sewer District (NEORSD). All of the fish collected in this area have mercury concentrations that meet the federal fish tissue standard (0.3 milligrams per kilogram, or parts per million).

We do not anticipate that sedimentation will occur near Outfall 002 that would cause a water quality impairment. We are not seeing fish with elevated levels of mercury in this area, and we expect that mercury concentrations will decrease as a result of the Pollutant Minimization Program.

Comment 12: The mercury variance should be denied because it substantially lacks the information required for approval of a water quality standards variance. Based on a letter from the Ohio EPA to FirstEnergy (9/12/08), the company was notified of several significant defects in their waiver request, including the failure to

adequately address the impact of retention time of the ash pond on removal efficiency for mercury, and to provide a maintenance schedule to optimize the ash pond's ability to remove mercury. This fails to address the core purposes of the PMP, and a permitted facility's obligations to identify and take cost-effective measures to meet water quality standards.

The required information on influent and effluent mercury concentrations submitted by FirstEnergy with the variance request is marked by missing and erroneous data. For example, FirstEnergy indicates in a footnote that it excluded from the analysis the sample taken on 12/10/07, as a possibly inverted sample. High discharge values occur at times, and they need to be included in the average discharge value, not excluded because they are too high. The accuracy of the analysis remains in question and FirstEnergy should be required to provide additional justification for the data analysis.

Response 12: We have been encouraging FirstEnergy to look at the retention time and performance of the existing wastewater treatment plant to see if mercury removal can be improved. If the company does not add this to their Plan of Study, the Agency would add this evaluation to the PMP language in the permit modification.

Unusual, and possibly invalid, data should be eliminated from the analysis. Inclusion of this data is irresponsible. Even if it is valid, including the sample result only raises the variance limit. We believe that it is better to exclude the value and work on locating and eliminating the sources of any unusually high values.

Comment 13: **The permittee is required to demonstrate that the requested variance complies with all applicable antidegradation requirements of OAC 3745-1-05, and characterize the extent of any increased risk to human health and the environment. The company should be required to address these rule requirements in their application.**

Response 13: FirstEnergy has complied with the applicable provisions of Ohio's Antidegradation Rule. Mercury variance applications are excluded from the social and economic evaluation by OAC 3745-1-05(D)(1)(g) because these factors were considered in the rule development. This rule also excludes mercury variances from the decision criteria in OAC 3745-1-05(C)(5). The Antidegradation Rule simply requires an applicant to describe the existing discharge level, the preferred design alternative and address the potential for regional treatment.

FirstEnergy submitted an Antidegradation Addendum with their application that requests an increase in the allowable mercury limits for Outfall 002. This request is excluded from alternatives analysis and socio-economic justification under the OAC. The company's preferred alternative is to be subject only to the 12 ng/l annual average limit specified in the variance.

Tying the discharge into sanitary sewers as part of regional treatment is not a good option, considering the size of the discharge, the lack of organic content in the discharge, and the proximity of combined sewer overflows in this area. This alternative may also not result in lower discharges of mercury to Lake Erie, if the local public sewage plant has mercury concentrations similar to the Lake Shore discharge.

The mercury variance rule has made a determination that any increased risk to human health and the environment from a mercury variance is consistent with protection of human health and the environment [see OAC 3745-33-07(D)(10)]. This determination was made based on the reductions in mercury that come from the PMP and from the continuation of any local or regional fish advisories that are based on public health protection.

Comment 14: Although the general variance requirements state that the company does not have to demonstrate “substantial and widespread social and economic impacts”, the company should be required to document and provide meaningful data on “background conditions, flow conditions, hydrologic modifications, physical conditions of the water body, human-caused conditions that cannot be remediated or remediation would result in more environmental damage, and adverse economic and social impacts” as required in the individual variance.

Response 14: The mercury variance rule does not require that these factors be addressed [OAC 3745-33-07(D)(10)(a)]. These factors were considered when the rule was issued. This information is only required for individual variance requests.

Comment 15: How will the Agency review the cost effectiveness of PMP proposals? What sort of independent analysis or verification will address how effective and justified the PMP is?

Response 15: We will look at the company's information using our experience with wastewater treatment and recycling and any other information that is available to the Agency on pollution prevention alternatives. If FirstEnergy requests to renew the variance, they will need to show

progress on the PMP. The PMP implementation and progress would be subject to public notice at that time. In the interim, the annual PMP reports from the company are public information and can be reviewed at any time.

Comment 16: What actions in the PMP are directed toward the reduction of mercury discharges from the ash wastewater and the existing treatment system?

Response 16: We agree that the PMP should optimize the removal of mercury in the existing treatment system. Provisions to do that are included in the PMP language in the permit modification.

Comment 17: The Agency should consider other similar facilities, both inside and outside of Ohio, when evaluating effective best management practices. What can we learn from other in-field applications and from literature?

Response 17: Ohio EPA is working with other U.S. EPA Region V states and our own Pollution Prevention Office to collect BMPs used to reduce mercury from industrial wastewater sources. These will be used to evaluate PMPs by NPDES permittees.

There is not a lot of information available from other Region V states. The recently-issued AMP Ohio discharge permit suggests that flow reduction from bottom ash systems, even to the point of zero discharge, is possible for some facilities. Also, information from Minnesota suggests that microfiltration technologies may reduce residual levels of mercury to the WQS, if mercury is suspended (as opposed to dissolved) in the effluent. Both questions should be addressed in the PMP.

Comment 18: FirstEnergy should be required to investigate pollution prevention options not currently in their plan of study. These options include:

- **Reducing air emissions in order to reduce deposition on the Lake, thereby reducing intake concentrations;**
- **Aggressively implementing its Pollution Minimization Program to reduce the amount of mercury entering the treatment system, including investigating alternate sources of coal, sources of mercury in chemicals in the receiving area, and numerous types of equipment.**

The PMP as laid out by FirstEnergy also contains no discussion of BMPs or other control mechanisms. The PMP should be required to evaluate:

- Fugitive coal dust from the unloading area;
- Eliminating mercury switches and thermometers; and
- Replacing fluorescent bulbs with mercury-free bulbs;

These measures will allow compliance with 1.3 ng/l.

Response 18: We agree that most of these are alternatives that should be evaluated. If FirstEnergy does not include them in their Plan of Study, Ohio EPA will add these conditions to the PMP requirements in the permit.

Note that air emissions are not subject to PMP requirements; only NPDES-regulated discharges are covered by these rules.

We are not as confident that these measures will allow compliance with the current effluent limit. At this point, there is little data on how much mercury reduction occurs with each specific PMP task. These measures are more appropriately part of a PMP conducted under a variance.

Comment 19: Even if end-of-pipe control technology proves necessary to meet the existing limit for mercury, this cost is preferable to the externalized cost of continuing to discharge mercury at current levels. The externalized social and economic impacts of elevated mercury discharges far outweigh the cost to FirstEnergy of installing whatever technology is necessary to comply with the law. This is the purpose of the law in the first place – to impose limited costs on private entities to avoid widespread costs to the public. According to an article in the Cleveland Plain Dealer (10/16/08), FirstEnergy recently committed to donating \$10 million to the Akron BioInnovation Institute. These comments are not intended to denigrate the company's charitable commitments; however, perhaps before moving forward with large gifts intended to improve the company's public image in Akron, FirstEnergy should invest money in actually complying with the law in Cleveland.

Before granting a mercury variance to FirstEnergy, Ohio EPA should require that the company investigate the externalized cost of elevated levels of mercury in the plant's effluent to the community immediately surrounding the plant, and compare this figure with the cost of installing pollution control technology. Issuing the variance is a low-cost alternative only to FirstEnergy, and a very high-cost alternative to Cleveland residents and Ohioans in general.

Response 19: There does not appear to be measurable externalized costs associated with the wastewater discharge from Outfall 002, based on the fish tissue results from Ohio EPA and the NEORSD. The available data show that all fish sampled to date are within mercury standards; as a result, we can not say that there will be health costs associated with this variance.

Comment 20: Ohio EPA should review reverse osmosis technology, as proposed by Baard Energy, for their wastewater treatment. Is this a technology that could meet the 1.3 ng/l limit?

Response 20: It is not clear that reverse osmosis (RO) technology can meet 1.3 ng/l. This technology was considered in the cost studies that led to Ohio's mercury variance rule. At the time, RO was considered the most promising technology for low-level mercury treatment, but could not ensure that this limit could be achieved.

While Baard Energy has proposed RO treatment units for its gasification wastewater, the treatment system is not intended to meet effluent concentrations this low. The mercury effluent limit for Baard (12 ng/l) is set at the final discharge; this treatment system is intended to keep mercury out of the wastewater because it would de-activate the gasification catalyst. The Agency does not have a Permit-To-Install application for Baard's treatment systems; we can not evaluate how low a mercury level that the RO system will achieve at this time.

Similar treatment systems (membrane filters) installed as the basic operating system of a public treatment works have shown mixed results on this scale. While the Delphos wastewater plant has met the GLI limit (0.25 ng/l avg., 0.82 ng/l maximum, 17 samples, 2007-08), the Geauga County McFarland plant has not been able to achieve it (2.1 ng/l avg., 12 ng/l maximum, 2004-08, 31 samples). We do not yet have enough experience with a sufficient number of these systems to determine whether membrane technology can reliably attain an average limit of 1.3 ng/l.

Comment 21: The lowest cost alternative of all would be simply to shutter the Lake Shore coal-fired plant entirely. The 249 megawatt capacity does not represent an enormous amount of baseload generating capacity; this capacity could be easily replaced with cheap Combined Heat & Power or Waste Heat Recovery generation through installations on existing power plants and industrial facilities, which has the added benefit of emitting no additional carbon. Sierra Club studies have show that these processes could add between 1,500 and 3,350 MW of new baseload generation in Ohio, at a cost of only \$1000 per kilowatt of capacity.

Response 21: The NPDES permit, mercury variance and PMP conditions deal primarily with wastewater issues. While this is an interesting proposal, the re-direction of production sources is an issue to be considered by the management of FirstEnergy.

Comments on the Copper Dissolved Metal Translator (DMT) Study

Comment 22: What portion of the Outfall 002 flow comes from metal cleaning?

Response 22: About 1.8% of the Outfall 002 flow comes from metal cleaning.

Comment 23: Is sedimentation of copper a potential concern? Has or will the Agency sample, review existing data, implement new or additional sediment sampling near the facility?

Response 23: There have been a number of DMTs granted by Ohio EPA (see Response 24 below). We have not seen excessive copper in sediments downstream of these dischargers and do not anticipate that copper sedimentation will occur near Outfall 002 that would cause a water quality impairment.

Comment 24: The DMT request by FirstEnergy is unprecedented. It is not clear what reductions in copper discharges would occur. The company should be required to fully explain the basis for the copper DMT request in clear language that might allow community members and interested third parties to review and provide appropriate comments on this request.

Response 24: DMT-based limits are fairly common in Ohio NPDES permits. Ohio EPA established DMTs for several waterbodies in the late 1990s; these DMTs are used in wasteload allocations and limits development for 35 major facilities (both public and industrial). A list of these is attached.

Several power plants have obtained approvals for DMT studies and limits in the past. These include:

- FirstEnergy Sammis – copper (75 ug/l)
- FirstEnergy Eastlake – copper (80 ug/l – Outfall 002)
- FirstEnergy Eastlake – copper (66 ug/l – Outfall 003)
- Duke Energy Zimmer – copper (92 ug/l)

FirstEnergy has requested this increase because this outfall occasionally does not meet the final limit in the current permit.

Comment 25: The DMT study is deeply flawed. Of the 23 samples used in the DMT calculation, Sample #5 was thrown out due to the dissolved value apparently being greater than the total value, and Sample #21 was thrown out as an 'outlier'. Actually, the value recorded for Sample #21 lies within an order of magnitude of the values of most other samples in the study, and is more likely a result of some peak in the effluent concentration, especially given the plant's practice of periodically undergoing a chemical metal cleaning process. Ohio EPA should therefore reject this request solely on the basis of improper data collection and analysis methods.

Also, FirstEnergy does not seem to have submitted an alternative solution to the DMT, other than simply raising the limit. Ohio EPA should require the facility to develop a Plan of Study and PMP before considering this request.

Response 25: We believe that 21 sample pairs are sufficient to determine a DMT. Even without two sets of data, this number of samples still provides a statistically significant number of samples for decision making.

The type of result shown in Sample #5 occasionally occurs during DMT sampling; it has happened at times during Ohio EPA's sampling during 1997-98. This type of odd result is the reason why the Agency or an applicant collects large number of samples – no individual result can be considered perfect or representative.

We agree that Sample #21 results should be thrown out as an outlier. Even if it is the result of some peak in dissolved copper concentration, the effect of including this sample would be to increase the DMT and discharge limit further than the company had requested.

It is true that FirstEnergy has not submitted a basic alternatives analysis, and statement on the appropriateness of regional treatment. These items are required by the Antidegradation Rule to make sure that there is not an obviously better alternative than the DMT. Based on this omission, Ohio EPA is not proposing to grant the DMT at this time; however, if FirstEnergy send us information on these items, the Agency may revise the modification, provide public notice, and extend the public comment period.

End of Comments

Parameter name: Mercury, Total (Low Level)

Reporting code: 50092 (6/4/2001-11/12/2008)

Units of measure: ng/l

# of Obs.	# of Obs. > MDL	# of Obs. excluded	Min. Value	Max. Value	MaxChk Value	PEQ Method	R ² Value	PEQ average	PEQ max.
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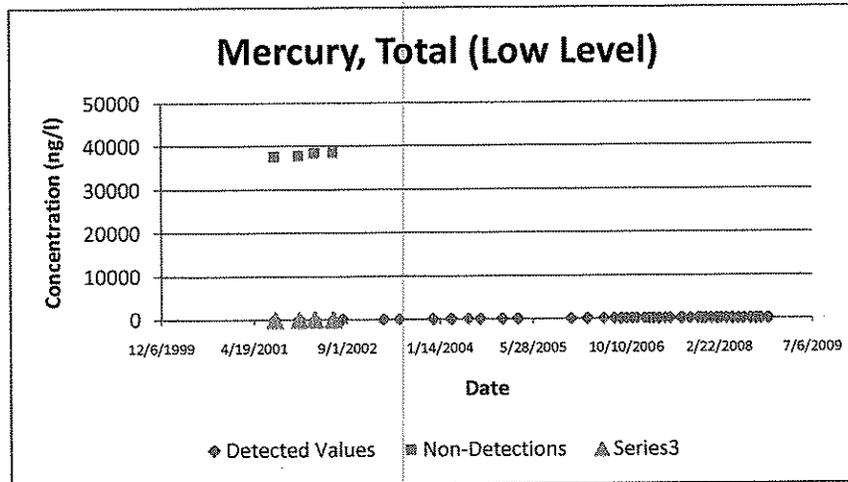
48	44	4	0.591	13.8	16.867	B	0.9933	7.1316	11.505
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Permit number: 3ib00004

Outfall number: 002

Date	Reported Value	A Code	MDL	Enter "x" to exclude as outlier
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6/4/2001		AA	0.2 UG/L	x
6/10/2001		AA	0.2 UG/L	x
6/18/2001		AA	0.2 UG/L	x
6/28/2001		AA	0.2 UG/L	x
8/9/2001	5.57			
12/17/2001	5.5			
3/12/2002	1.33			
6/20/2002	2.01			
8/7/2002	2.03			
12/10/2002		AA	0.5 NG/L	
3/17/2003	0.705			
6/9/2003	3.25			
8/12/2003		AA	.5 NG/L	
12/8/2003	0.84			
3/15/2004	1.31			
6/15/2004	7.71			
8/17/2004	5.36			
12/16/2004	0.962			
3/8/2005	1.07			
6/30/2005		AA	0.5 NG/L	
8/16/2005		AA	0.2 NG/L	
12/19/2005	6.78			
3/16/2006	3.08			
6/12/2006	2.12			
8/8/2006	11.2			
9/14/2006	1.24			
10/11/2006	3.24			
11/13/2006	2.81			
12/6/2006	1.96			
1/18/2007	2.59			
2/12/2007	0.591			
3/6/2007	2.66			
4/4/2007	1.27			
5/7/2007	1.42			



6/4/2007	0.614
7/31/2007	0.744
8/9/2007	6.74
9/19/2007	3.65
11/2/2007	1.59
11/20/2007	3.1
12/10/2007	13.8
1/10/2008	3.72
2/13/2008	5.77
3/4/2008	3.18
4/3/2008	2.35
5/5/2008	1.08
6/4/2008	0.711
7/2/2008	1.1
8/11/2008	3
9/8/2008	1.74
10/2/2008	1.64
11/12/2008	1.1

Ohio EPA Data

year	sitename	rm	specname	sampletype	name	conc	unit	dateanlz	latitude	longitude	wbid
1992	Lake Erie at Cuyahoga R.; East harbor	1184.7	COMMON CARP	SFFC	Mercury	0.05490	ug/g	- -	413143	813940	OH90 17
1990	Lake Erie Power Plant, Cleveland Harbor (left	1185	COMMON CARP	SOFC	Mercury	0.1	ug/g	- -	413143	813940	OH90 17
1990	Lake Erie at Municipal	1185	LARGEMOUTH BASS	SOFC	Mercury	0.1	ug/g	- -	413143	813940	OH90 17
1992	Lake Erie at Cuyahoga R.; East harbor	1184.7	YELLOW BULLHEAD	SOFC	Mercury	0.02390	ug/g	- -	413143	813940	OH90 17
2001	Lake Erie - Grid 1168 Area 3	0	FRESHWATER DRUM	SOFC	Mercury	0.055	mg/kg	11-Mar-02	413165	814260	
2001	Lake Erie - Grid 1168 Area 3	0	FRESHWATER DRUM	SOFC	Mercury	0.141	mg/kg	11-Mar-02	413165	814360	
1990	Lake Erie; E of Cleveland Harbor	1183.1	WALLEYE	SOFC	Mercury	0.08	ug/g	- -	413228	813815	OH90 17
1990	Lake Erie at Euclid Beach Park	1179.7	COMMON CARP	SOFC	Mercury	0.07	ug/g	- -	413503	813417	OH90 17
1990	Lake Erie at Euclid Beach Park	1179.7	ROCK BASS	SOFC	Mercury	0.08	ug/g	- -	413503	813417	OH90 17
2006	Lake Erie - Cleveland Grid 1215 CRN 15a	0	WALLEYE	SOFC	Mercury	0.081	mg/kg	27-Mar-07			
2006	Lake Erie - Cleveland Grid 1215 CRN 15b	0	WALLEYE	SOFC	Mercury	0.069	mg/kg	27-Mar-07			
2006	Lake Erie - Cleveland Grid 1268 CRN 15a	0	WHITE PERCH	SOFC	Mercury	0.040	mg/kg	27-Mar-07			
2006	Lake Erie - Cleveland Grid 1268 CRN 15a	0	WHITE PERCH	SOFC	Mercury	0.074	mg/kg	27-Mar-07			
2006	Lake Erie - Cleveland Grid 1268 CRN 15a	0	WHITE PERCH	SOFC	Mercury	0.059	mg/kg	27-Mar-07			
2006	Lake Erie - Cleveland Grid 1268 CRN 15a	0	WHITE PERCH	SOFC	Mercury	0.053	mg/kg	27-Mar-07			
2006	Lake Erie - Cleveland Grid 1228 CRN 17b	0	YELLOW PERCH	SOFC	Mercury	0.036	mg/kg	27-Mar-07			
2006	Lake Erie - Cleveland Grid 1228 CRN 17b	0	YELLOW PERCH	SOFC	Mercury	0.042	mg/kg	27-Mar-07			
2006	Lake Erie - Cleveland Grid 1228 CRN 17a	0	YELLOW PERCH	SOFC	Mercury	0.053	mg/kg	27-Mar-07			
2006	Lake Erie - Cleveland Grid 1228 CRN 17a	0	YELLOW PERCH	SOFC	Mercury	0.066	mg/kg	27-Mar-07			

NEORS Data

2008	East Harbor between E. 55th and E.72		Steelhead Trout		Mercury	0.115	mg/kg				
2008	East Harbor between E. 55th and E.72		Largemouth Bass		Mercury	0.060	mg/kg				
2008	East Harbor between E. 55th and E.72		Common Carp		Mercury	0.158	mg/kg				
2008	East Harbor between E. 55th and E.72		Spotted Sucker		Mercury	0.036	mg/kg				

collorg	colldate	field_dup	labname	lipid	nooffish	length1	weight1	length2	weight2	length3	weight3	length4	weight4
OEPA - NEDO	13-Aug-92	FALSE	OEPA	6.87	3	550	2200	550	2500	490	2055	0	0
RAP	25-Sep-90	TRUE		3.28	3	580	3250	640	3400	575	3015	0	0
RAP	25-Sep-90	FALSE		0.05	3	336	560	335	555	334	520	0	0
OEPA - NEDO	13-Aug-92	FALSE	OEPA	1.16	3	320	400	320	490	285	300	0	0
ODNR	26-Jun-01	FALSE	OEPA	3.26	3	352	432	312	314	311	275	0	0
ODNR	26-Jun-01	FALSE	OEPA	3.01	3	392	761	362	576	361	543	0	0
RAP	25-Sep-90	FALSE		0.1	2	480	1250	480	1050	0	0	0	0
RAP	27-Sep-90	FALSE		5.21	3	615	3450	587	3375	572	2950	0	0
RAP	27-Sep-90	FALSE		0.05	4	255	320	223	270	246	342	225	278

ODNR	15-Apr-06	FALSE	OEPA	2.11	3	481	1308	437	984	448	1021	0	0
ODNR	15-Apr-06	FALSE	OEPA	1.55	2	432	905	442	838	0	0	0	0
ODNR	15-Apr-06	FALSE	OEPA	7.5	3	210	152	222	192	216	176	0	0
ODNR	15-Apr-06	FALSE	OEPA	5.61	3	242	251	230	198	227	212	0	0
ODNR	15-Apr-06	FALSE	OEPA	6.97	3	238	261	230	215	235	219	0	0
ODNR	15-Apr-06	FALSE	OEPA	7.18	3	204	143	217	173	210	147	0	0
ODNR	15-Apr-06	FALSE	OEPA	0.56	3	222	141	223	137	220	133	0	0
ODNR	15-Apr-06	FALSE	OEPA	0.66	3	243	202	241	204	224	138	0	0
ODNR	15-Apr-06	FALSE	OEPA	0.49	4	213	119	214	120	222	130	221	124
ODNR	15-Apr-06	FALSE	OEPA	0.49	3	252	227	225	136	225	125	0	0

Average
Weight

NEORS	26-Sep-08	NEORS	2675
NEORS	26-Sep-08	NEORS	178.7
NEORS	26-Sep-08	NEORS	3320
NEORS	26-Sep-08	NEORS	1045

Ohio EPA Dissolved Metal Translator Sites - Page 1

	Description	Cd	Cr	Cu	Pb	Ni	Ag	Se	Zn
Maumee River Basin									
Reference Site	Maumee River Reference	1.434309	4.705637	1.347441	7.036472	1.339606	NS	1.478162	3.39556
GM Defiance	Maumee River dst. GM Defiance	1.41753	3.505954	1.25674	6.426126	1.203462	NS	1.024538	2.972122
Archbold WWTP	Brush C. dst Archbold	0.514572	1.290204	1.1009	3.713353	1.046592	NS	NS	1.121972
Wauseon WWTP	Turkeyfoot Creek dst. Wauseon	0.98571	1.62789	1.060264	1.279396	1.068427	NS	NS	1.01923
Cuyahoga River Basin									
Reference Site	Cuyahoga River at SR 422 (reference)	0.949404	1.051253	1.291292	4.776984	1.189833	NS	1.503374	1.583785
Kent WWTP	Cuyahoga River at Waterworks Park	1.272098	1.416979	1.026934	22.27583	1.090184	NS	1.008352	1.218167
Fishcreek WWTP									
Twinsburg WWTP	Tinkers Creek dst. Hawthorn	0.760287	0.888692	1.025185	2.296663	1.020461	NS	1.378645	0.903834
Streetsboro WWTP									
Aurora Westerly WWTP									
Bedford WWTP									
Bedford Heights WWTP									
Akron WWTP	Cuyahoga River at Bolenz Rd.	1.263434	1.072891	1.255719	10.52678	1.049277	NS	1.015298	1.08375
Ottawa River Basin									
Reference Site	Ottawa R. @ Thayer Rd. (upstream BP)	ERR	0.990026	1.020189	1.755916	1.095534	NS	ERR	0.918538
Shawnee #2 WWTP	Ottawa R. dst BP behind Fire Station	ERR	2.361043	1.297209	1.38868	1.082909	NS	ERR	1.086764
Clark Oil Refinery									
Lima WWTP									
PCS Nitrogen									
Ohio River Basin									
Reference Site	Ohio River Reference	0.229129	1.722164	1.227205	6.815146	1.272293	NS	NS	2.43473
Marietta WWTP	Ohio River dst. Marietta	0.478954	1.964337	1.098909	5.126753	1.20481	NS	NS	2.038646
Elkern	Ohio River dst. Amoco & Elkern	1.206562	5.084137	1.351981	13.31873	1.214953	NS	NS	1.921546
Amoco									

ERR - unable to determine translator

NS - not sampled

Ohio EPA Dissolved Metal Translator Sites - Page 2

		Cd	Cr	Cu	Pb	Ni	Ag	Se	Zn
Black River Basin	Description								
Reference Site	East Fork East Branch Black River (referer ERR		0.694284	0.772709	0.790767	1.001231	NS	0.814023	0.886328
Amherst WWTP	Beaver Creek dst Amherst	1.02122	0.72127	1.293603	1.207154	0.886181	NS	ERR	1.02122
Elyria WWTP	Black River dst. Elyria	1.073687	1.860508	1.079921	2.853921	1.02316	NS	ERR	1.03949
Oberlin WWTP	Plum Creek dst. Oberlin	1.048953	1.476247	1.064128	1.229889	0.973517	NS	NS	0.998779
North Ridgeville WWTP	French Creek dst. North Ridgeville	0.993252	0.638195	1.064299	1.674793	0.964052	ERR	ERR	0.974733
RTI and Lorain WWTP	Black River dst Turning Basin, upper	1.523415	3.525058	1.344258	13.98333	1.201058	NS	0.860867	2.708345
	Black River dst Turning Basin, lower	3.0993	3.392188	1.448356	27.85601	1.212965	NS	0.862624	4.377498
	Black River dst Kobe 001	1.061953	1.659845	1.212417	6.220121	1.012335	NS	NS	1.337328
Vermillion River Basin									
Reference Site	Vermillion River Reference	0.936356	0.995637	1.034364	2.326048	1.002785	NS	NS	1.123912
Vermillion WWTP	Vermillion River dst. Vermillion	1.384916	3.747577	1.401002	11.3797	1.135425	NS	NS	1.956319
Scioto River Basin									
Reference Site	Scioto River Reference	2.259872	1.565877	1.232994	4.176832	1.086001	NS	1.05372	1.056417
Chillicothe WWTP	Scioto River dst. Chillicothe	0.537589	1.083882	1.03041	2.877455	0.921398	NS	ERR	0.934335
USEC 003 & 004	Scioto River dst. USEC 004	1.278337	2.070923	1.219827	5.186511	1.124778	NS	NS	1.319711
London WWTP	Oak Run dst. London	0.733435	0.933027	1.170367	2.075043	1.022996	NS	NS	1.074569
Mead Paper	Paint C. dst. Mead Paper	2.105406	1.37719	1.209403	2.342674	1.225607	NS	1.008313	1.858026
Circleville WWTP DuPont	Scioto River dst. Thomson	1.97292	2.576443	1.277608	6.329367	1.163881	NS	0.975434	1.187337
Rocky River Basin									
Reference Site	East Branch Rocky River Reference	ERR	3.877864	1.34532	5.466647	1.355748	ERR	NS	2.529176
North Royalton A WWTP	East Branch Rocky dst. North Royalton	0.833929	0.676257	1.009259	3.113245	1.032963	ERR	NS	0.901177
Medina 300 WWTP									
North Olmstead WWTP	Rocky River dst. North Olmstead	0.554599	1.522835	0.596315	1.440029	0.958596	NS	NS	0.963838

ERR - unable to determine translator

NS - not sampled